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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,804	11/16/2000	Richard Shann	S1022/8572	3979
James H Morris Wolf Greenfield & Sacks PC 600 Atlantic Avenue Boston, MA 02210			EXAMINER KISS, ERIC B	
			ART UNIT 2192	PAPER NUMBER
			MAIL DATE 10/13/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/714,804

Applicant(s)

SHANN ET AL.

Examiner

ERIC B. KISS

Art Unit

2192

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The reply filed July 2, 2009, has been received and entered. Claims 1-8 and 12 are pending.

Response to Arguments

2. Applicant's arguments filed July 2, 2009, have been fully considered but they are not persuasive.

Regarding the § 101 rejection, applicants' arguments are not persuasive because contrary to applicants' assertion, the target microprocessor is not a part of the claimed assembler. It is merely recited as part of an intended environment for its use or descriptive of the intended functionality and as such does not render the claimed assembler a statutory machine. Specifically, claim 1 recites an assembler for a target microprocessor (emphasis added). Further, claim 1 recites the assembler comprising a descriptor file containing information descriptive of the instruction set of said target microprocessor.

Regarding the § 112 rejection, because the "support" that applicants point to at best describes only the manual tracking of changes in the instruction set, not automatic tracking as recited in the claims.

Applicants' unsupported assertions that one of ordinary skill in the art would be able to practice the invention are unavailing. Evidence of the knowledge of one skilled in the art cannot be substituted for an enabling disclosure. See *Auto. Techs. Int'l, Inc. v. BMW of N. Am., Inc.*, 501 F.3d 1274, 1283 (Fed. Cir. 2007) (quoting *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997) ("It is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention in order to constitute adequate enablement.")).

The purpose of the requirement that the specification describe the invention in such terms that one skilled in the art can make and use the claimed invention is to ensure that the invention is communicated to the interested public in a meaningful way. The information contained in the disclosure of an application must be sufficient to inform those skilled in the relevant art how to both make and use the claimed invention. MPEP § 2164.

The examiner has repeatedly noted (Advisory Action 2/1/2008; Non-Final Rejection 2/17/2009 at 5), and notes again that applicants' specification merely suggests without any additional enabling disclosure that a "utility program 31" can be used to access instruction set architecture data to provide the descriptor file. (Specification p. 9, lines 32-36.) There is simply no further description to guide one of ordinary skill in the art as to how to create a "utility program 31" except for vague assertions that it is possible to create a descriptor file of unspecified format manually.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-4 and 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE

Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory).

Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. *See, e.g., In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, *i.e.*, the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the

computer program's functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035.

Claims 1-4 and 12 recite an "assembler" comprising a series of elements that, viewed in light of the specification, can be reasonably interpreted as software, *per se*. The claims do not define any structural and functional interrelationships between the software elements and a computer that would permit the described functionality to be realized when the software is employed as a computer component. Accordingly, claims 1-4 and 12 appear to merely set forth functional descriptive material *per se*, which is nonstatutory.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-8 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claim 1 recites, "wherein the assembler automatically tracks changes in the instruction set by acquiring the data from the descriptor file reflecting the changes thereby a hard-coding of the assembler is reduced." Similarly, independent claims 5, 7, and 8 each recite, "automatically tracking the changes in the instruction set by acquiring the data from the descriptor file thereby a hard-coding to track the changes is reduced."

As discussed in the Advisory Action mailed February 1, 2008, the only support for this feature that applicants have pointed out is page 8, lines 31-32 of the specification, which reads in full, "[T]he assembler is able to automatically track changes in the instruction set as they occur." (See Remarks 12/21/2007 p. 7). As further explained in the Advisory Action,

This cited portion merely expresses a preference that the assembler be able to automatically track changes in the instruction set as they occur and by itself provides no enabling disclosure necessary to support such a feature. Further, the description that follows applicant's cited portion appears to describe a manual derivation of the descriptor file from manipulation and inspection of the instruction set, and merely suggest without any additional enabling disclosure that a "utility program 31" can be used to access instruction set architecture data to provide the descriptor file. (Specification p. 9, lines 32-36.).

(Advisory Action 2/1/2008). The "automatic" embodiment of applicants' disclosure includes the use of utility program 31 to access instruction set architecture data 30 to provide the descriptor file 24.

In order to practice the claimed method, one of ordinary skill in the art would have to create a computer program capable of carrying out at least the steps of creating a new descriptor file as changes occur to the instruction set. As the court observed in *Sherwood*, the writing of a program may require varying degrees of skill:

In general, writing a computer program may be a task requiring the most sublime of the inventive faculty or it may require only the droning use of clerical skill. The difference between the two extremes lies in the creation of mathematical methodology to bridge the gap between the information one starts with ("the input") and the information that is desired ("the output").

In re Sherwood, 613 F.2d 809, 816-17, 204 USPQ 537, 544 (CCPA 1980), cert. denied, 450 U.S. 994 (1981). Given a properly defined program specification or a detailed algorithm (*i.e.*, the "bridge" between the input and output, *see Id.*), a computer programmer can generally produce an acceptable computer program to carry out the functions necessary to implement the program

specification. However, where the program specification is lacking, the computer will, in general, not relieve the burden on the programmer of filling in the missing details. In this case, the steps necessary to carry out the manipulation and inspection of the instruction set are not described with any particularity such that this procedure can be easily automated through software. In order to develop such software, a programmer must first determine the nature and format of the input, and next determine the necessary algorithm to translate such input into meaningful output. The only detailed description of the descriptor file appears to be the diagrammatic illustrations in Figs. 4 and 6. However, these figures illustrate tables and do not suggest a particular file structure, nor do they show the format of instruction set architecture data 30 or how it may be automatically translated into the illustrated format. Because the algorithm necessary to implement the automatic tracking of changes in the instruction set is not described in the specification and instead must be derived by a programmer through speculation as to what the appropriate inputs, translations, and outputs would be, one of ordinary skill in the art would not be able to practice the claimed method without undue experimentation.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The examiner can also be reached on alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric B. Kiss/
Eric B. Kiss
Primary Examiner, Art Unit 2192